



**How-to Guide
SAP NetWeaver 2004s**

How To... Integrate XI and BI in SAP NetWeaver 2004s

Version 1.00 – May 2006

**Applicable Releases:
SAP NetWeaver 2004s
(Business Information Management - Enterprise
Data Warehousing;
End-to-End Process Integration - Enabling
Application-to-Application Processes)**

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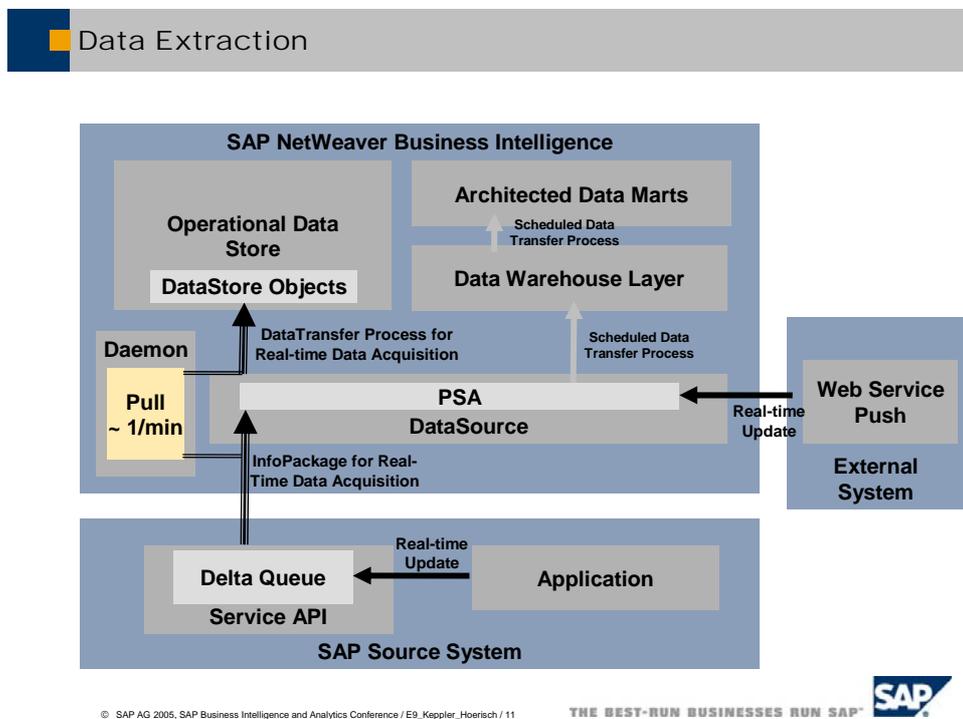
1 Scenario

This document describes how to send data from SAP NetWeaver'04s usage type XI to SAP NetWeaver'04s usage type BI with full Quality of Service (Exactly Once In Order). The solution is based on usage type BI and XI of SAP NetWeaver '04s.

2 Introduction

Since SAP NetWeaver'04s data can be transferred via "Push" into the PSA of a WebService DataSource. From there the data can be processed via Data Transfer Process.

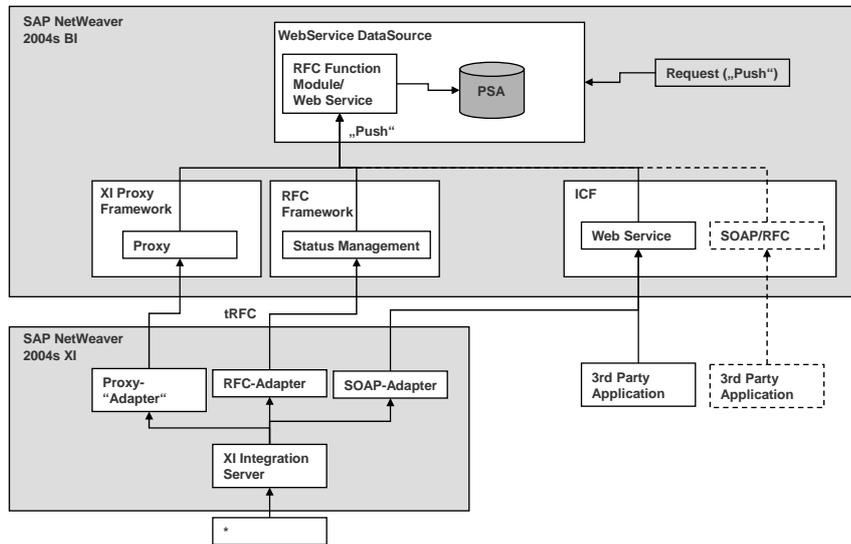
The following picture shows the data flow possibilities in SAP NetWeaver usage type BW:



However, the Web Service and the generic SOAP/RFC Service do not support "Exactly Once" transfer of data as no transaction ID is handled in the framework. Therefore data might be transferred several times which is not valid for all delta options that can be used in SAP NetWeaver'04s usage type BI.

The following picture shows different options of the data flow from SAP NetWeaver usage type XI to SAP NetWeaver usage type BW.

XI BW Intergration Adapter Overview



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THE BEST-RUN BUSINESSES RUN SAP 

SAP NetWeaver'04s usage type XI provides a variety of ways to access data from different sources. There are adapters to connect files, databases, messaging systems, Web Services. With R/3 systems (3.1h and higher), IDoc and RFC can be used.

The standard communication channel for SAP systems is the ABAP Proxy which is available for Web AS 6.20 and higher.

The Proxy communication supports the full Quality of Service (“Exactly Once In Order”) between SAP NetWeaver'04s usage type XI and SAP NetWeaver'04s usage type BI which other adapters do not:

- The RFC-Adapter does not support “In Order” but only “Exactly Once” (so-called tRFC)
- The SOAP-Adapter supports “In Order”, i.e. the order of the messages of the sender is kept during the processing. However “Exactly Once” cannot be implemented in this scenario in conjunction with the receiver (see above).

Hence, SAP recommends using the **ABAP Proxy** communication, only the ABAP Proxy implementation is described in this paper.

Further information and the prerequisites to enable the full Quality of Service are described in note 717162.

3 The Result

The data is stored in the PSA and can be processed via a Data Transfer Process (DTP).

4 Implement XI-BW Proxy communication

4.1 Remarks an Prerequisites

1. Prerequisite

The BW is integrated to the XI landscape.

If this is not yet the case, follow the configuration guide of XI which you find here: SAP Service Marketplace (<http://service.sap.com/instguides>)

Hint: As only the proxy communication is used, there is no configuration of IDOC or RFC communication necessary.

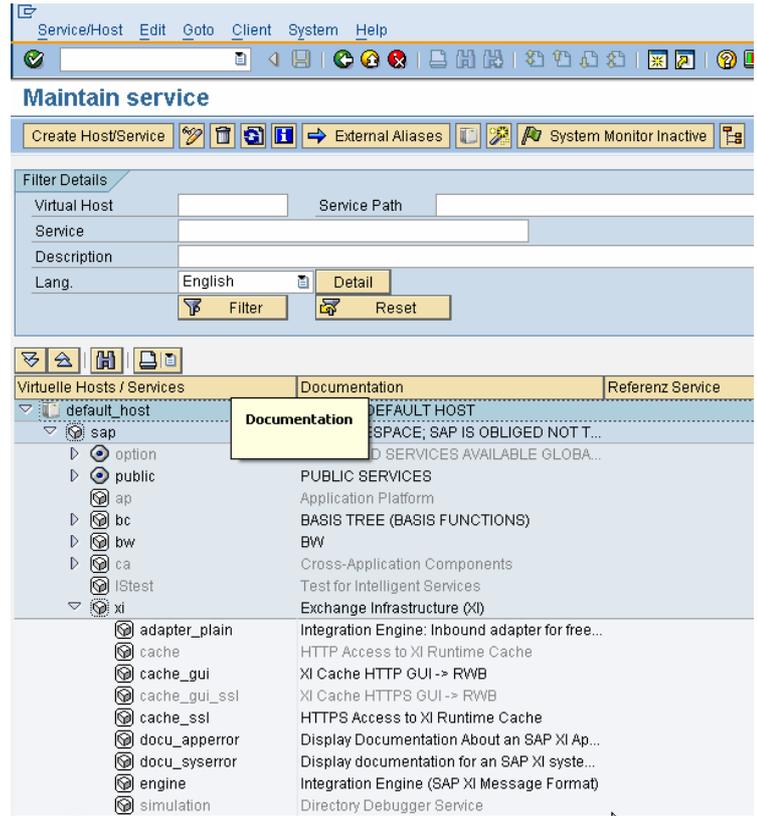
2. Create a software component in the Software Landscape Directory (SLD)

3. Check Online Documentation if further information is needed.

4. Check availability of following XI services in SAP NetWeaver usage type BI system:

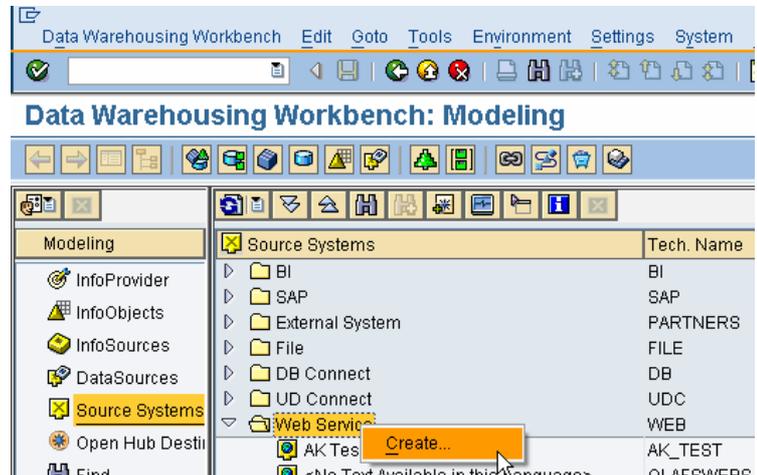
- adapter_plain
- cache_gui
- cache_ssl
- docu_apperror
- docu_syserror
- engine

Check in transaction SICF

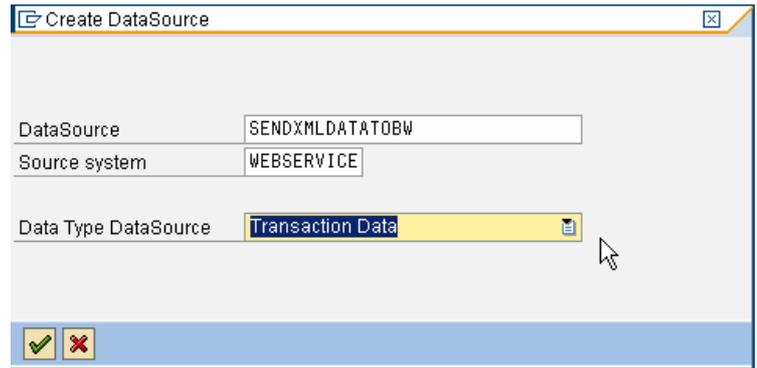


4.2 Configure SAP NetWeaver usage type BI

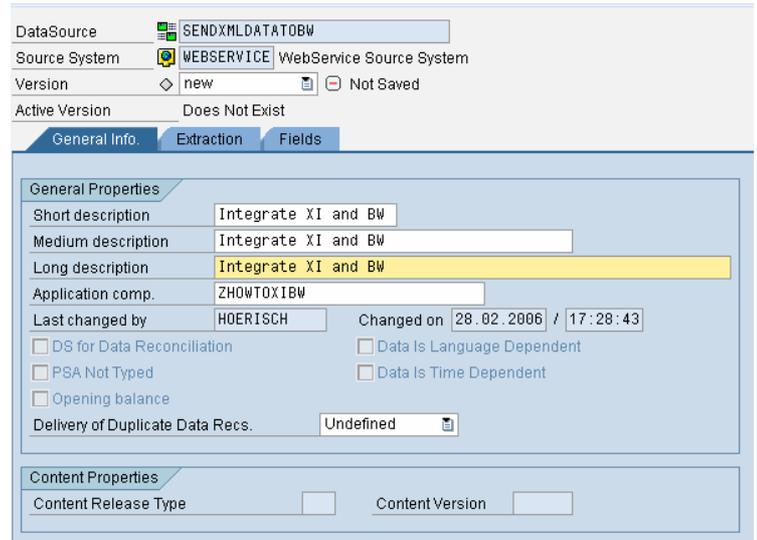
5. Create a WebService Source System



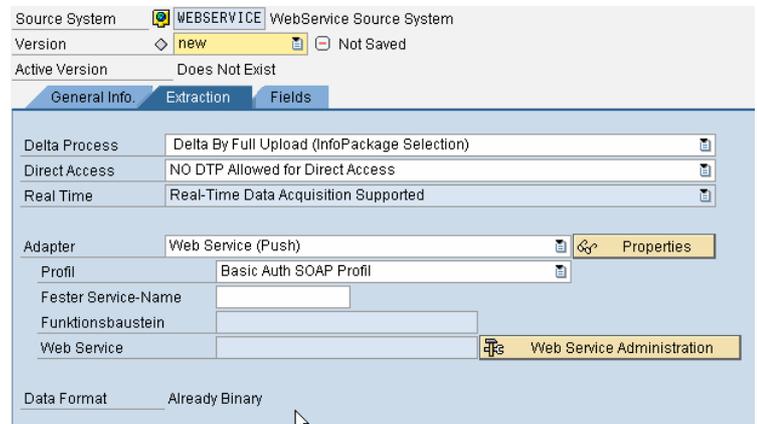
6. Create a DataSource of type "Transaction Data" belonging to the WebService Source System



7. Maintain the general information



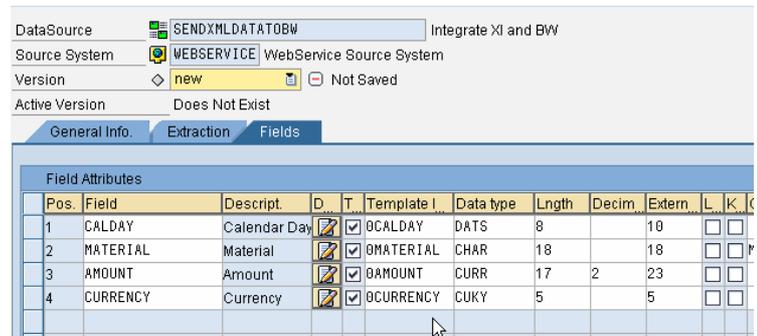
8. Maintain the Extraction properties



9. Maintain the fields

CALDAY
MATERIAL
AMOUNT
CURRENCY

with the corresponding InfoObjects



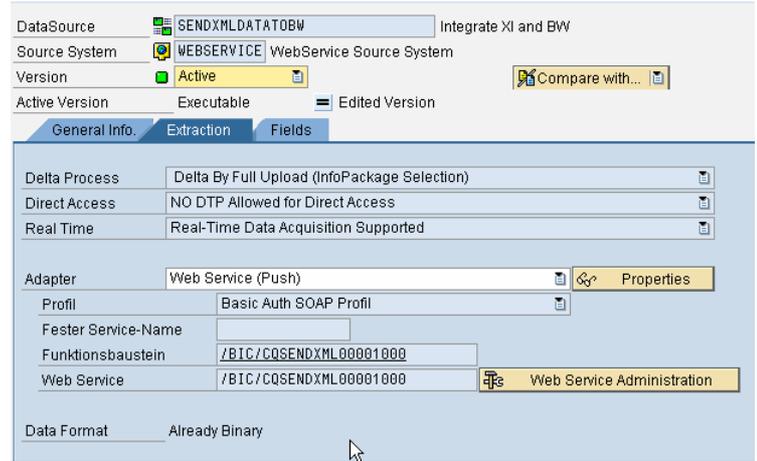
10. Save and activate the DataSource

The Web Service:
/BIC/CQSENDXML00001000

and the Function Module
/BIC/CQSENDXML00001000

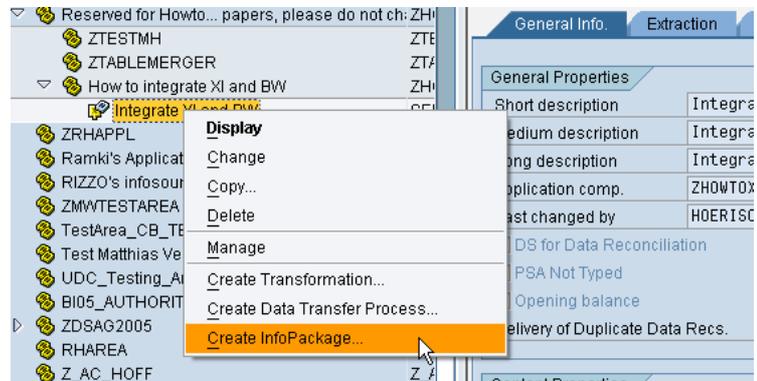
are generated in this example.

Hint:
A fixed name for the WebService can be given (“/BIC/CQ” + Name). This name will be stable during the transport between systems.



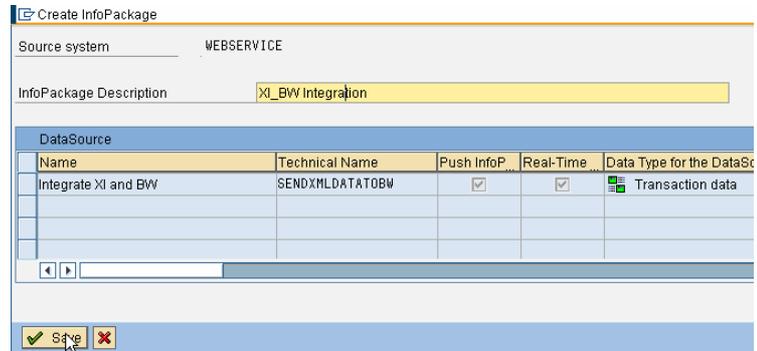
11. Create a InfoPackage

Right mouse click on DataSource

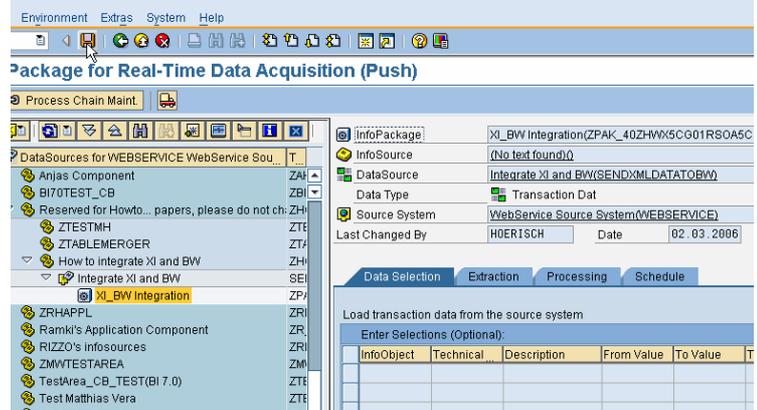


12. Give the InfoPackage a Description
“XI_BW Integration”

and press Save



13. Save the InfoPackage



4.3 Configure SAP NetWeaver usage type XI

14. Open the Repository Framework (Design) of the XI Integration Builder. You may start the application by executing transaction SXMB_IFR in the BW system. (Further information can be found in the XI documentation -> Design and Configuration Time -> Design)

Choose your Software Component in the tree and open it with double-click: here we use:

XITestComponent

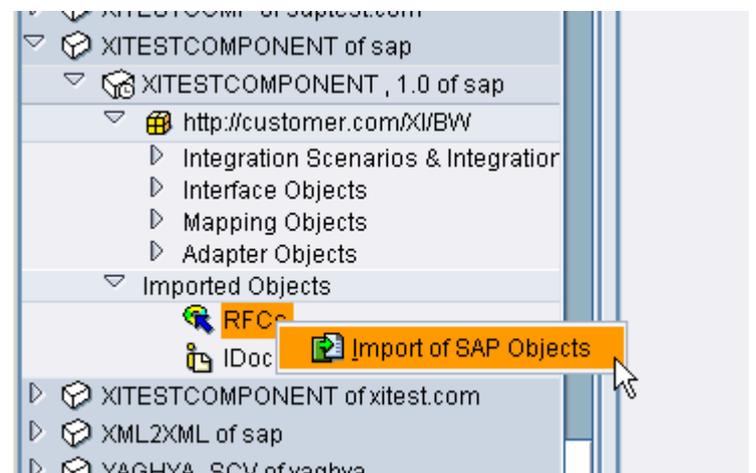
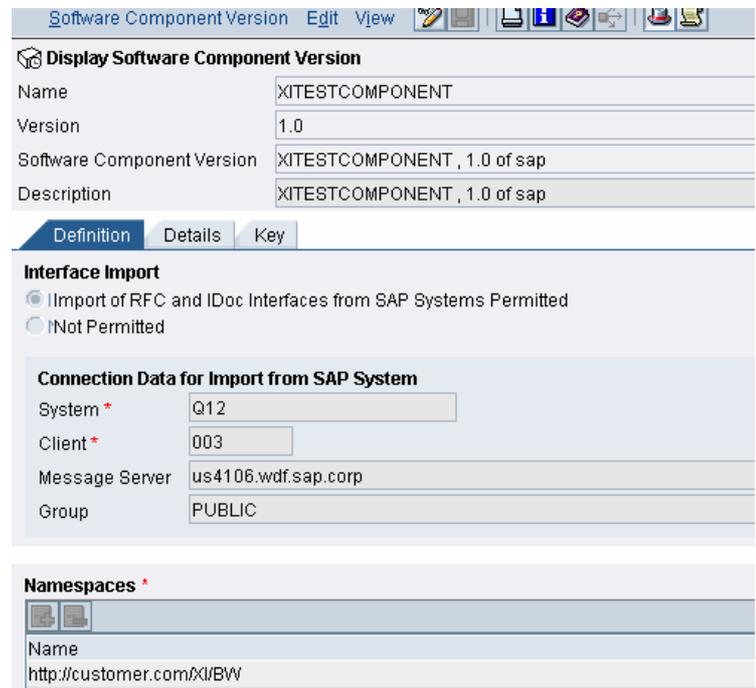
Enter the system data of the BW system that you want to connect.

Note: If any problems occur when executing the Integration Builder check the client software installation (follow note 580351)

Save the settings

15. Import the RFC function module

Right mouse click on RFCs

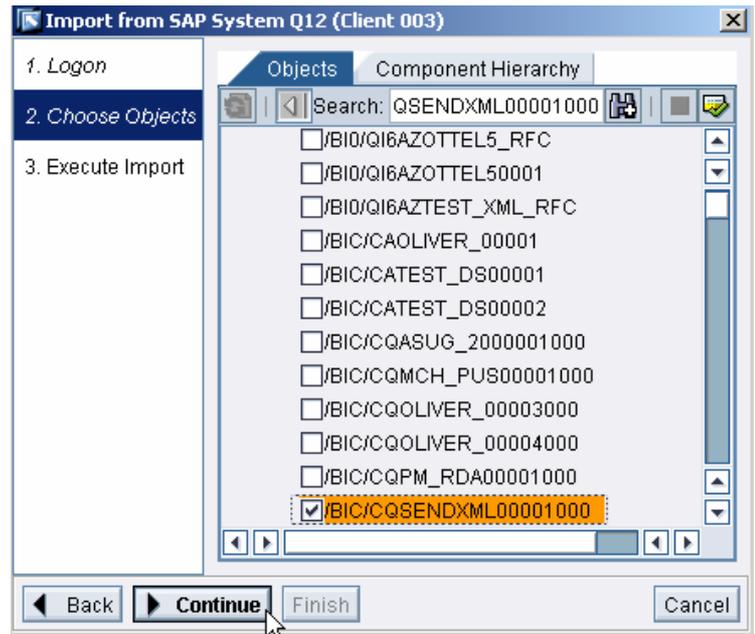


16. Logon to the SAP System

Select RFC generate in Step 6
In this case:
/BIC/CQSENDXML00001000

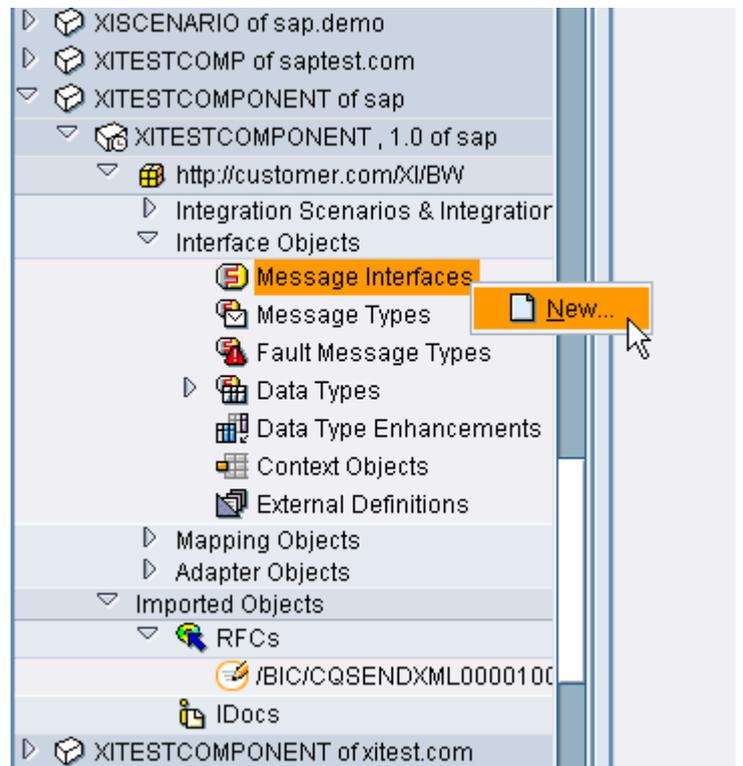
Press continue

Select the function module and
press Finish



17. Select your namespace, here: "http://customer.com/XI/BW" is used

Choose "Interface Objects" and then
"Message Interface"
Create a Message Interface there by
choosing "New" from the context
menu



18. Define the Message Interface Name, here DataToBW and a description, here “Interface to BW DataSource SENDXMLDATATOBW”

The Namespace and Software Component Version is filled by system

Press Create

Message Interface	
Name *	DataToBW
Namespace *	http://customer.com/XI/BW
Software Component Version *	XITESTCOMPONENT , 1.0 of sap
Description	Interface to BW DataSource SENDXMLDATATOBW

19. Choose the settings like this:

Direction: Inbound
Mode: Asynchronous

Edit Message Interface

Name: DataToBW
 Namespace: http://customer.com/XI/BW
 Software Component Version: XITESTCOMPONENT , 1.0 of sap
 Description: Interface to BW DataSource SENDXMLDATATOBW

Definition | Context Objects | WSDL

Attributes

Category: Inbound Outbound Abstract
 Mode: Synchronous Asynchronous

Message Types

Input Message Type Name *

20. Select the imported RFC Message by executing the value help for Input Message Name

DataToBW
 http://customer.com/XI/BW
 XITESTCOMPONENT , 1.0 of sap
 Interface to BW DataSource SENDXMLDATATOBW

ts | WSDL

Outbound Abstract
 Asynchronous

Type Name * Namespace *

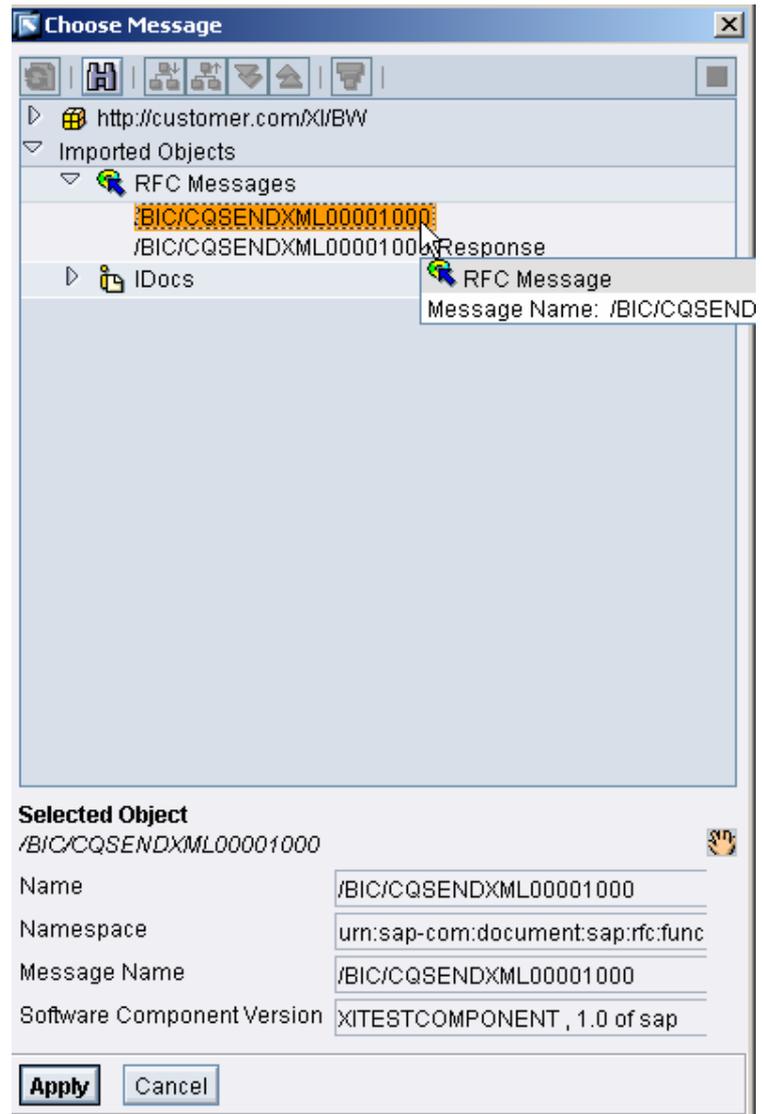
Type Name * Namespace * Display Input

21. Select the RFC message

/BIC/CQSENDXML00001000

and

Press Apply

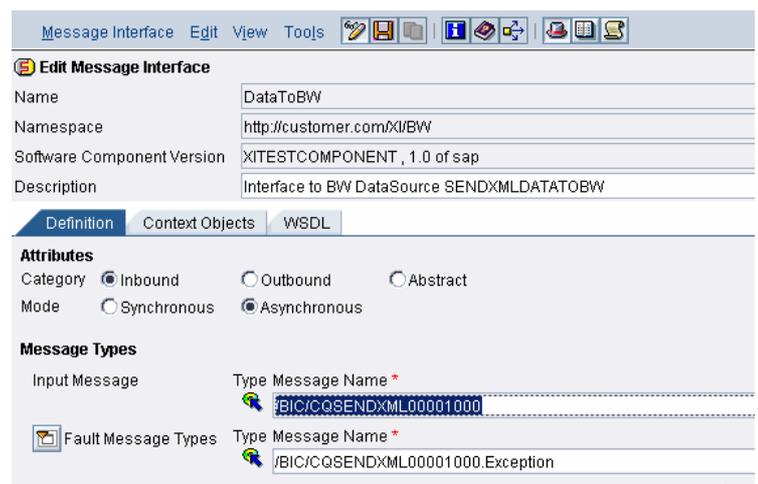


22. Select the Fault Message:

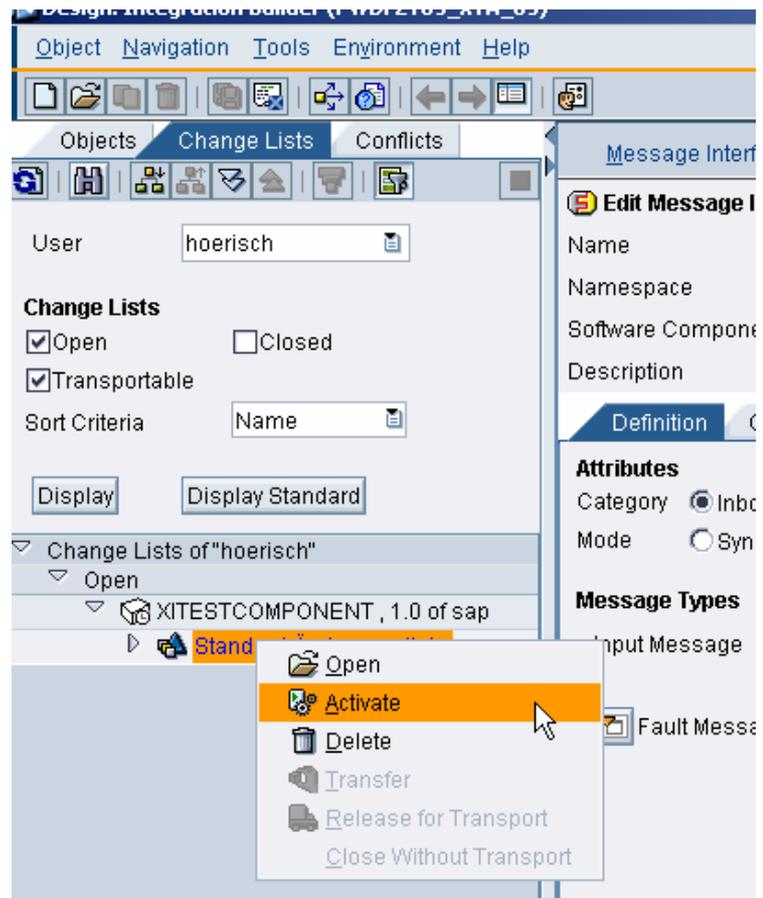
Object Type: "RFC Message"

Choose the Name via value help, here:
"/BIC/CQSENDXML00001000.Exception"

Save the Message Interface.



23. Activate the Change List which you find on the Tab "Changelist"



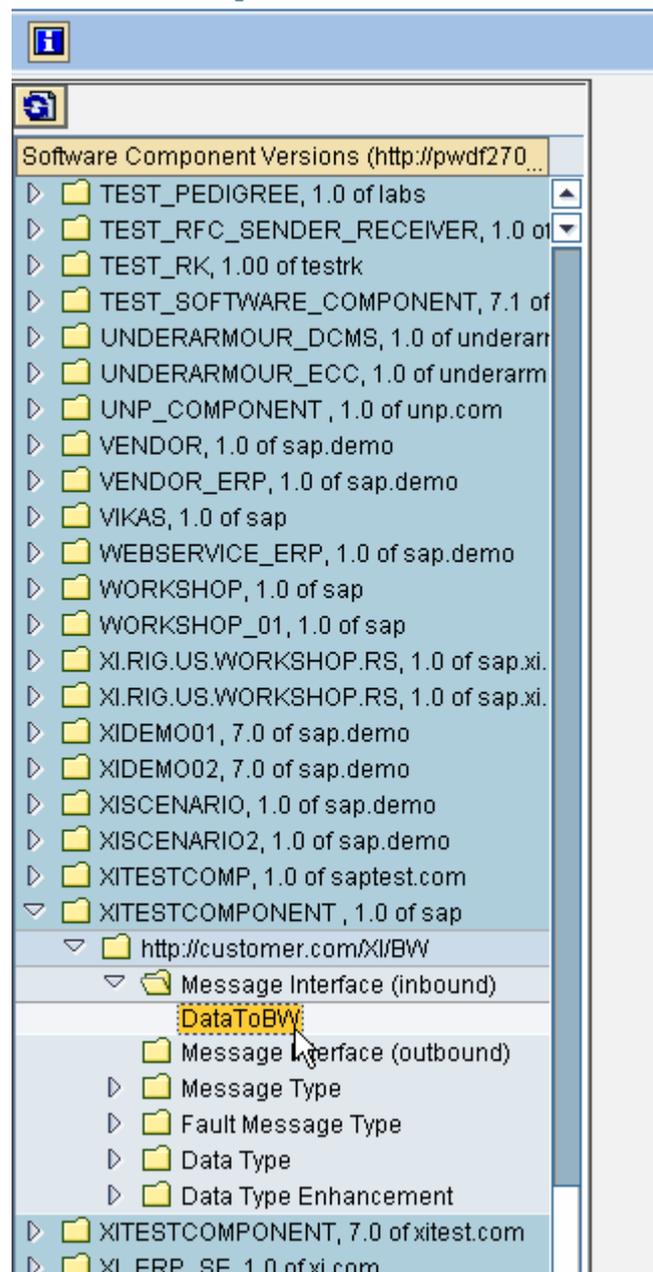
4.4 Generate the Proxy in SAP NetWeaver usage type BI

24. Start transaction SPROXY and Refresh the tree

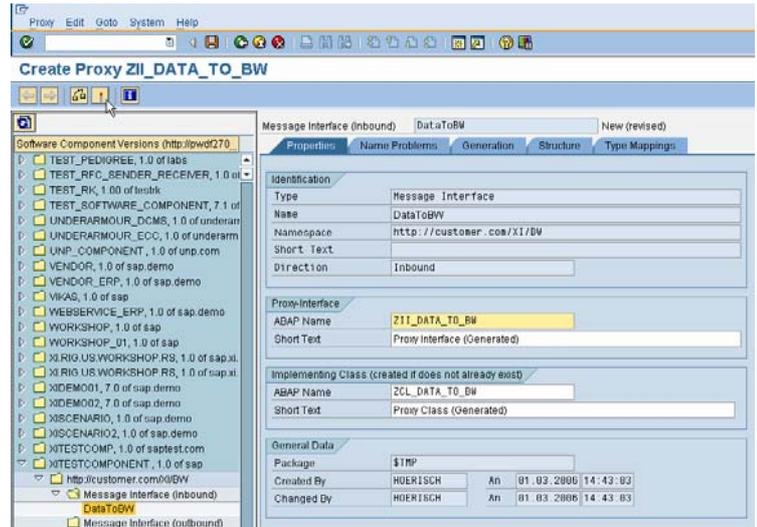
Double-click on the Message Interface “DataToBW” of the Software Component Version “XITESTCOMPONENT” in the Software Component in your namespace (here: “http://customer.com/XI/BW”)

Choose a package (e.g. \$tmp)

Choose a prefix (we use “Z” here)



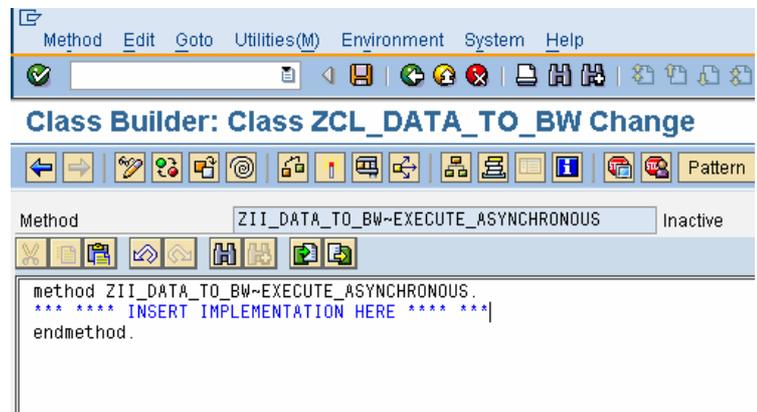
25. Activate the Proxy



26. Navigate to the implementing class ZCL_DATA_TO_BW by double clicking

Navigate to the method "EXECUTE_ASYNCHRONOUS" by double-clicking.

Choose the change mode.



27. Insert the implementation of the method based on this sample coding and change the highlighted elements.

/BIC/WCQSENDXML00001000: is the type of the EXPORTING parameter of the generated function module (see Step 6 in Configure SAP NetWeaver usage type BI)

/BIC/CQSENDXML00001000: Is the name of generated function module (see Step 6 in Configure SAP NetWeaver usage type BI)

ZCX__BIC__CQSENDXML00001000_E: is the name of the exception class which can be found in the signature of the method (Press the button "Hide/show signature" to make the signature visible).

```
method ZII_DATA_TO_BW~EXECUTE_ASYNCHRONOUS.

  DATA: l_text TYPE string,
         l_s_data TYPE line of /BIC/WCQSENDXML00001000,
         l_t_data TYPE /BIC/WCQSENDXML00001000.

  FIELD-SYMBOLS <l_line> LIKE LINE OF input-data-item.

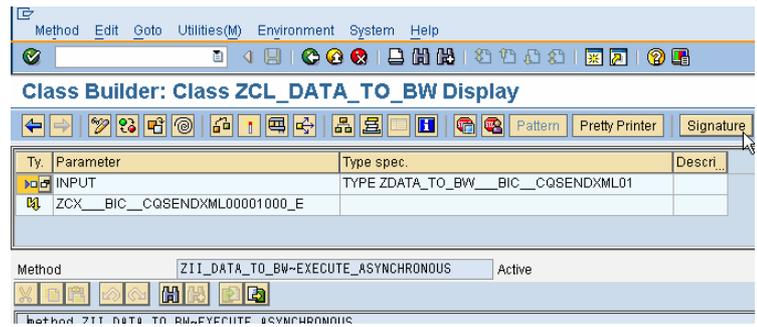
  LOOP AT input-data-item ASSIGNING <l_line>.
    MOVE-CORRESPONDING <l_line> TO l_s_data.
    APPEND l_s_data TO l_t_data.
  ENDLOOP.

  CALL FUNCTION '/BIC/CQSENDXML00001000'
    EXPORTING
      data      = l_t_data
    EXCEPTIONS
      OTHERS   = 1.

  IF sy-subrc NE 0.
    MESSAGE ID sy-msgid TYPE sy-msgty NUMBER sy-msgno
    WITH sy-msgv1 sy-msgv2 sy-msgv3 sy-msgv4 INTO l_text.
    RAISE EXCEPTION TYPE ZCX__BIC__CQSENDXML00001000_E
    EXPORTING text = l_text.
  ENDIF.

endmethod.
```

28. Make the signature visible to enter



29. Save and activate the method and all class and interface components

30. Result

The SAP NetWeaver usage type BI is now ready to receive data from the Integration Server of SAP NetWeaver usage type XI via the Proxy Framework and the implemented Proxy.

4.5 Verification Scenario

To verify the configuration it is necessary to configure an Integration Scenario. In this example a XML payload will be send from the Inbound Interface of SAP NetWeaver usage type XI to SAP NetWeaver usage type BI by using the Test Tool in the Runtime Workbench of the Integration Monitoring.

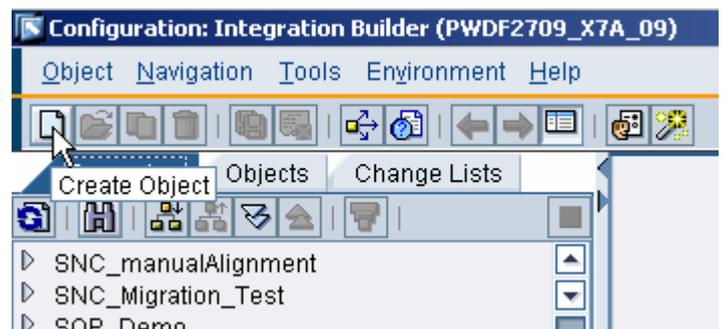
Instead of this any other customer scenario can be configured.

1. Open the Integration Directory
Execute transaction SXMB_IFR (in SAP NetWeaver usage type BI or XI) and select the “Integration Directory” under Integration Builder: Configuration



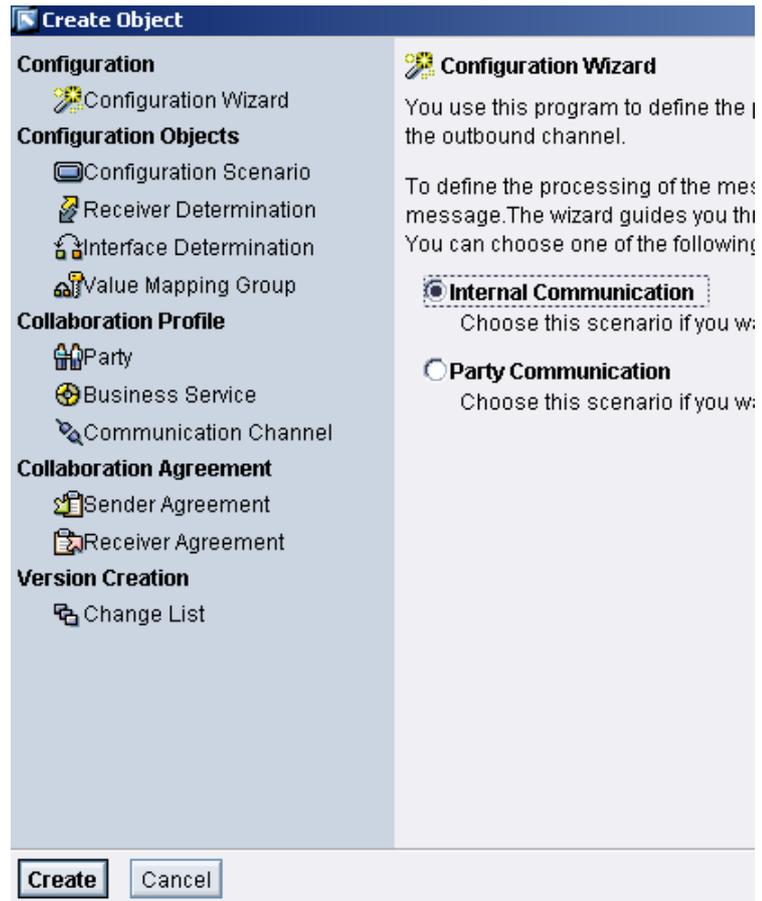
2. Select the tab “Scenarios” and choose “Create” from the context menu

Note: Please use the wizard to create the Test Scenario!



3. Choose “Internal Communication” and

Press Create



4. Inbound message configuration (The name could be change to “Outbound message” configuration in future.)

Specify the scenario parameters:

Service Type: Business Service

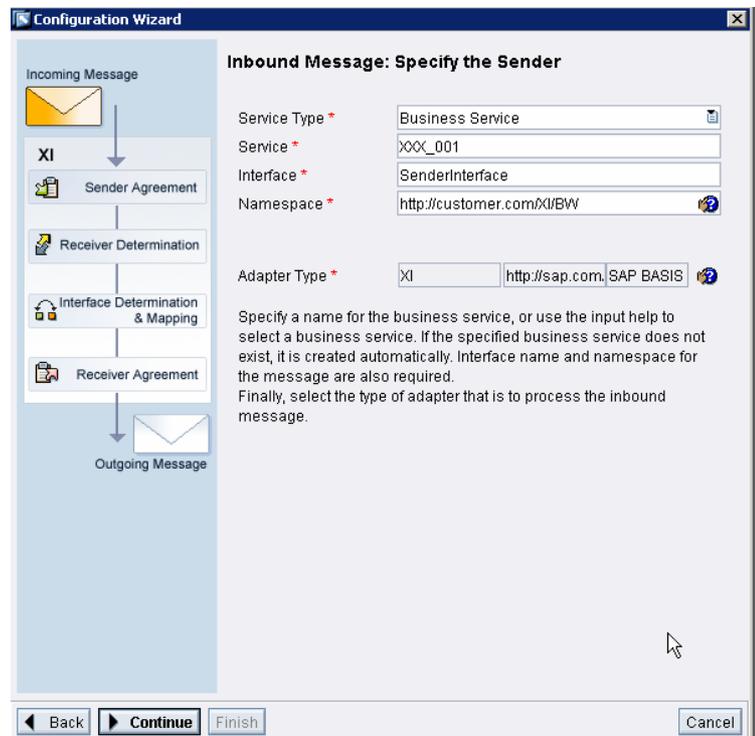
Service: XXX_001

Interface: SenderInterface

Namespace:

http://customer.com/XI/BW

Adapter Type “XI”



5. Outbound message configuration

Here the configuration made in 4.3 is used.

Specify the scenario parameters:

Service Type: Business Service

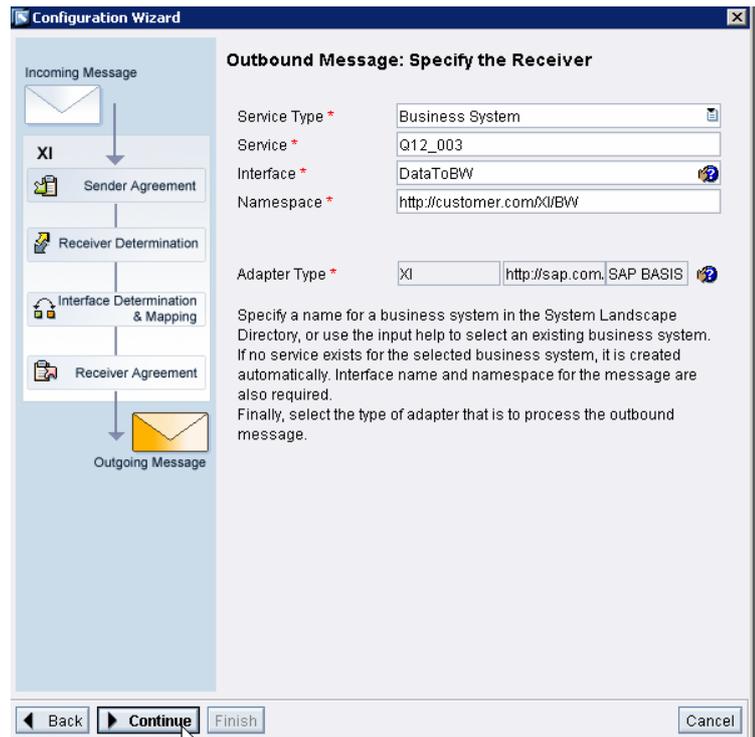
Service: Q12_003

Interface: DataToBW

Namespace:

http://customer.com/XI/BW

Adapter Type "XI"



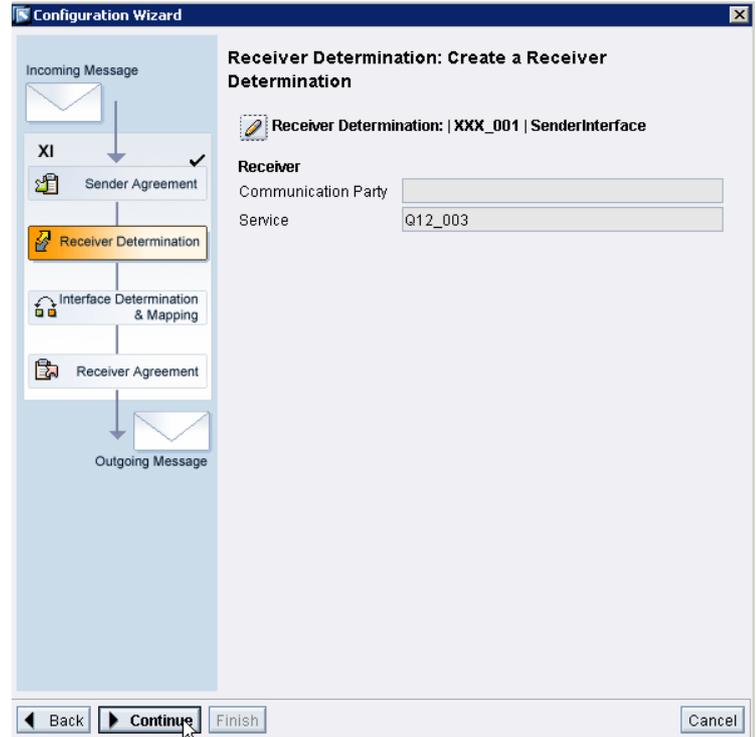
6. No Sender Agreement needs to be specified:

Click Continue



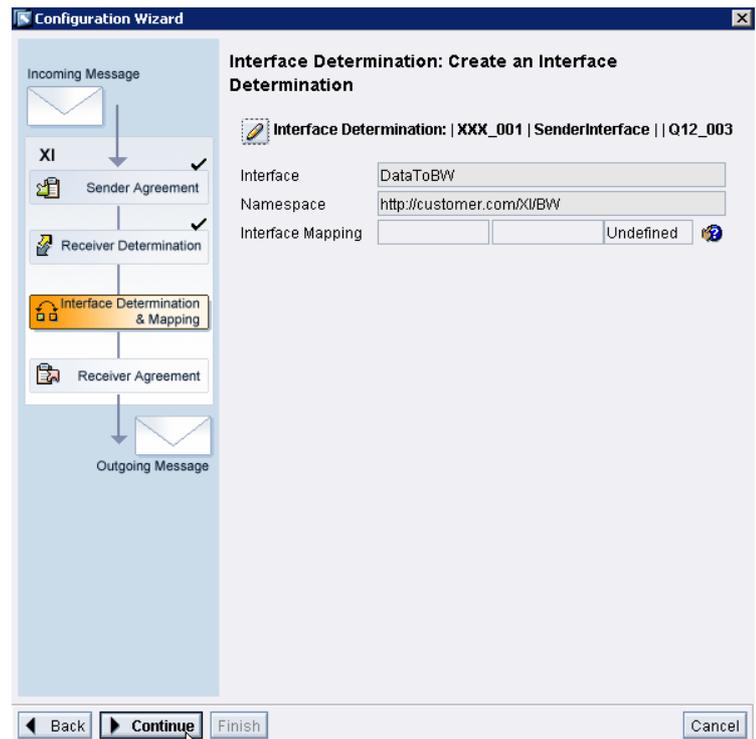
7. The Receiver Determination is automatically used from the configuration

Click Continue



8. The Interface Determination is automatically determined from the configuration.

Click Continue



9. The Interface Determination is automatically determined and can be generated by the system.

Click Continue

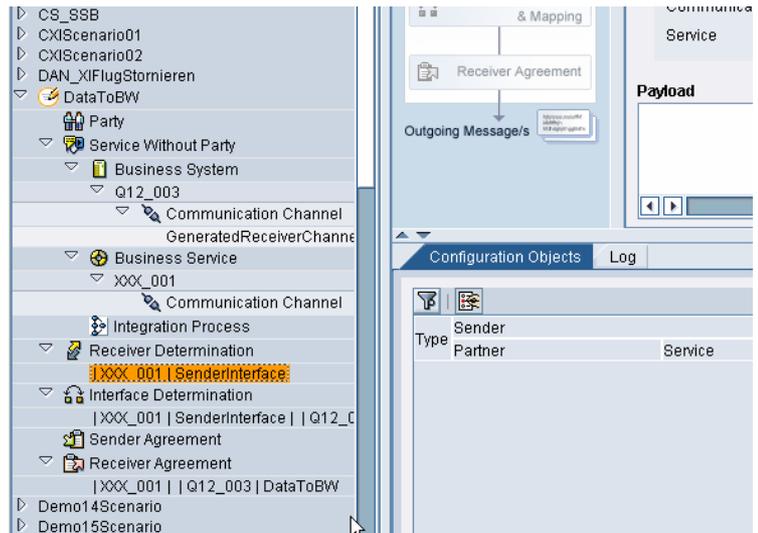


10. The scenario name "DataToBW" is used in this example.

Click Finish



11. All the settings are generated



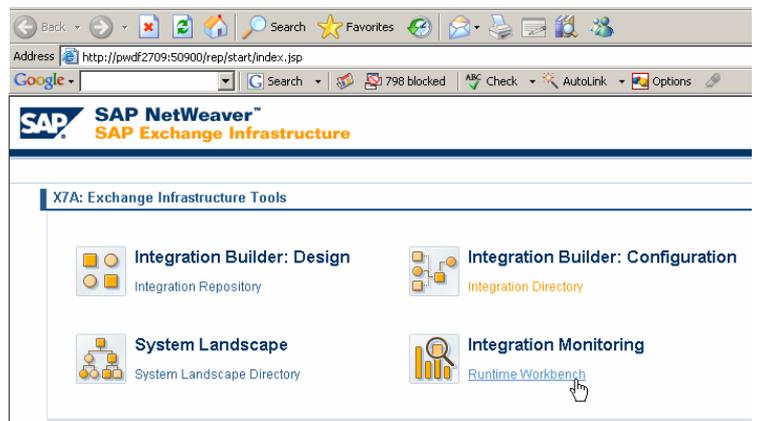
12. Activate your Change list

Hint: You may check the Scenario element on the Scenario Tab by executing "Check Scenario" in the menu "Scenario".

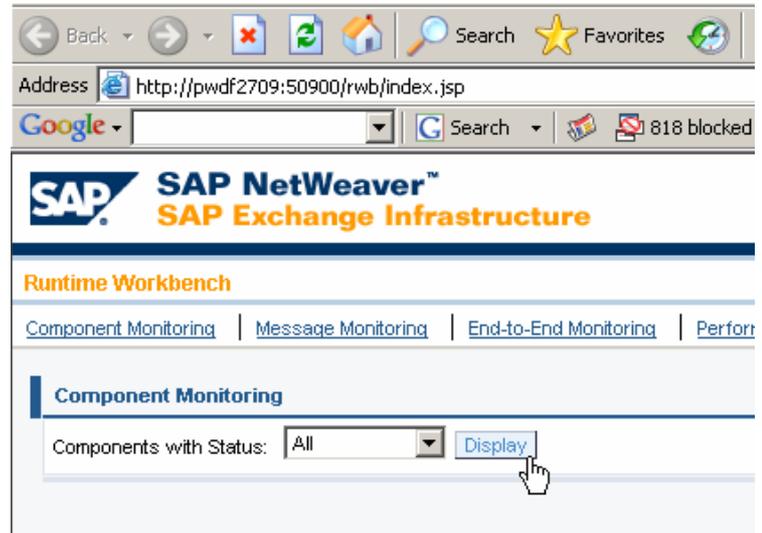
4.6 Test the Scenario

1. Start the Integration Monitoring:
Runtime Workbench

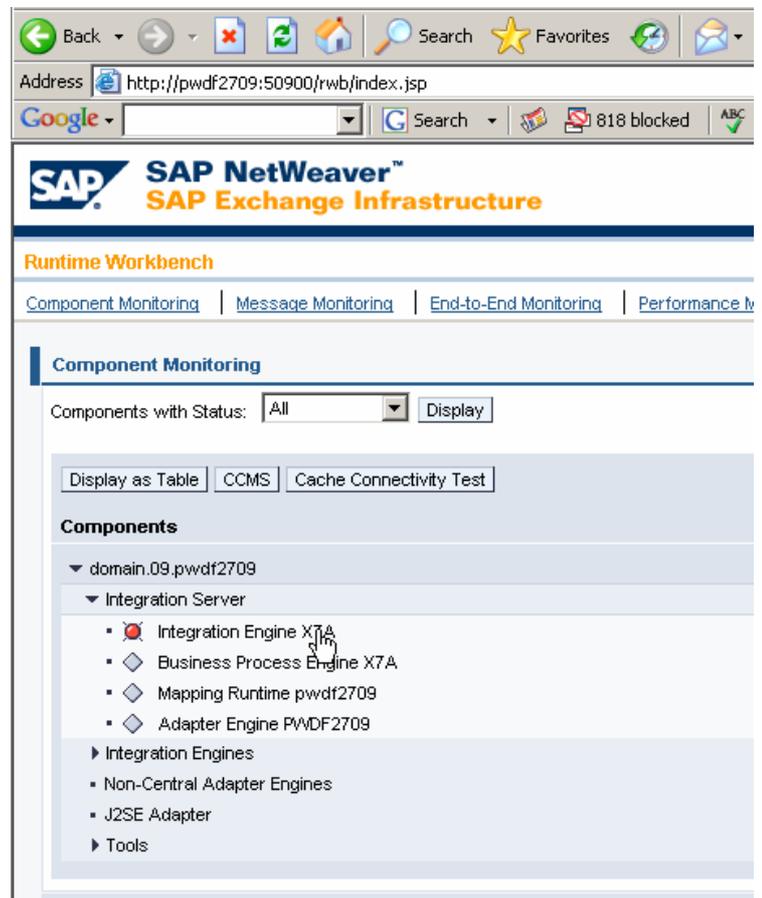
(Transaction: SXMB_IFR)



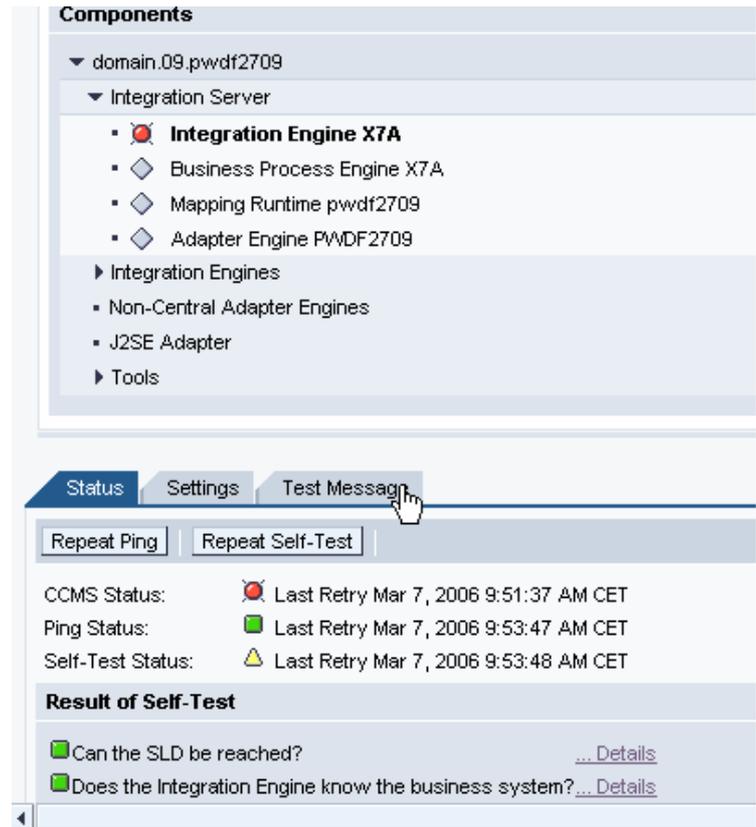
2. Click Display



3. Click Integration Engine

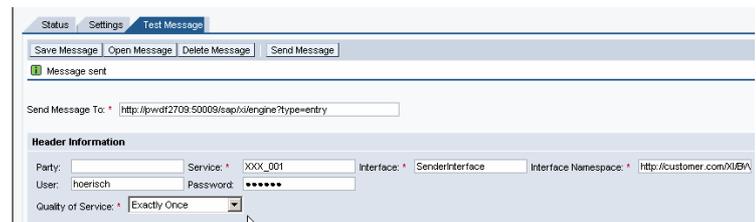


4. Click "Test Message"



5. Fill the Header Information of the Test Message as configured before

Service: *XXX_001*
Interface: *SenderInterface*
Interface Namespace:
http://customer.com/XI/BW
User and Password of the SAP
NetWeaver XI System
Quality of Service: *Exactly Once*



6. Insert the Payload

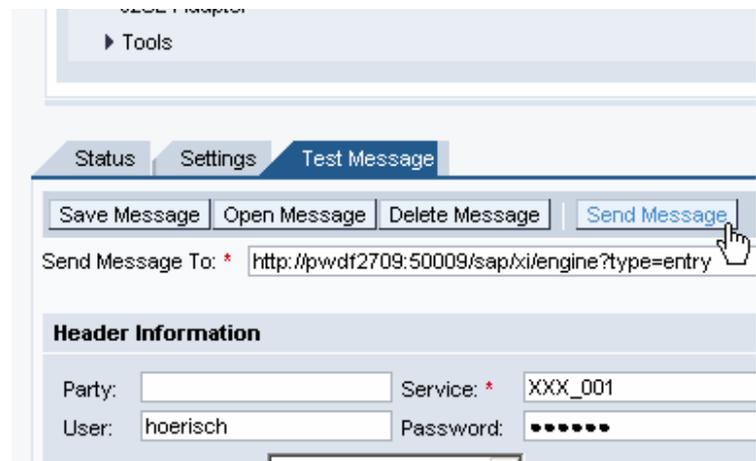
Data Records;

CALDAY: 1999-01-24
MATERIAL: 4711
AMOUNT: 260
CURRENCY: EUR

CALDAY: 1999-01-24
MATERIAL: 4712
AMOUNT: 100
CURRENCY: EUR

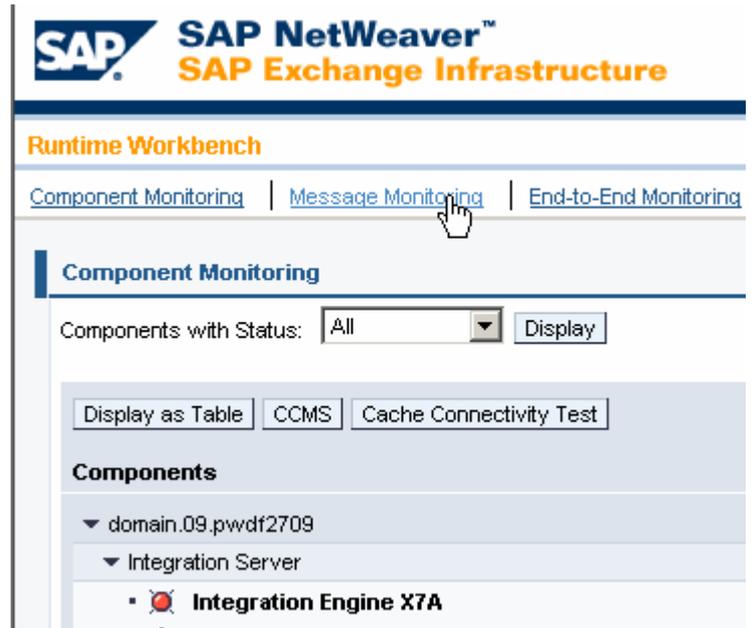
```
<?xml version="1.0" encoding="utf-8"?>
<ns1:DataToBW
xmlns:ns1="http://customer.com/XI/BW"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance">
<DATA>
<item>
<CALDAY>1999-01-24</CALDAY>
<MATERIAL>4711</MATERIAL>
<AMOUNT>260</AMOUNT>
<CURRENCY>EUR</CURRENCY>
</item>
<item>
<CALDAY>1999-01-24</CALDAY>
<MATERIAL>4712</MATERIAL>
<AMOUNT>100</AMOUNT>
<CURRENCY>EUR</CURRENCY>
</item>
</DATA>
</ns1:DataToBW>
```

7. Click Send Message



- The Message Monitoring shows the status of the message

Click Message Monitoring.

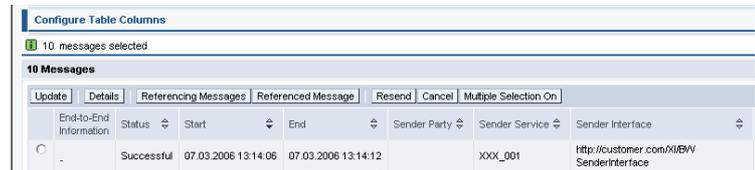


- Select the Messages from Component:

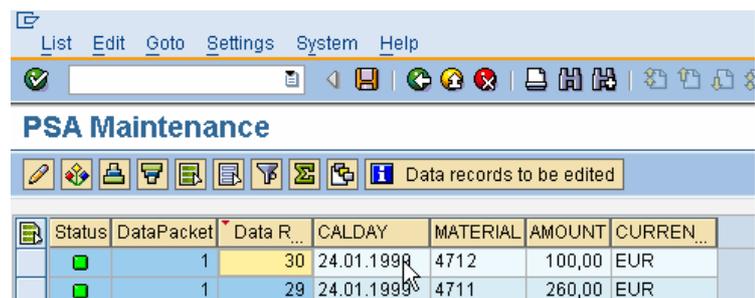
In this case from “Integration Engine X7A” From “Database”

Click Start

All the send message and the status are displayed.



- Check PSA entries for the DataSource “SENDXMLDATATOBW” in the Destination System



<http://www.sdn.sap.com/irj/sdn/howtoguides>